

REMARKS

In the present Office Action, the Examiner rejected all pending claims 1, 3-12, 15, 17, 18, and 21-28. After entry of the amendments provided herein, claims 1, 4-12, 15, 18, and 21-28 are pending in the application.

Specification and Drawing Figure

The Examiner raised objections to the specification and to FIG. 1. The amendments submitted herewith obviate the objections to the specification and drawing figure. Applicant therefore requests withdrawal of these objections.

35 U.S.C. § 112

The Examiner raised an objection to claim 15 and rejected claims 1, 21, 24, 26, 27, and 28 for informalities. Claims 1, 15, 24, and 27 have herein been amended to render the 35 U.S.C. §112 rejection of claims 1, 21, 24, 26, 27, and 28 and the objection to 15 moot. Applicant therefore requests that the Examiner withdraw the objection to claim 15 and the rejection of claims 1, 21, 24, 26, 27, and 28.

35 U.S.C. § 103

Claims 1, 15, 21, and 27-28 stand rejected under 35 U.S.C. § 103 as being unpatentable over purportedly admitted prior art by Applicant in view of United States Patent No. 5,763,994 issued to Kim on June 9, 1998 ("Kim"). Applicant traverses this rejection.

As a preliminary matter, Applicant submits that nothing in either Kim or the background section of the present application teaches or suggests combining the two references. The

background section of Applicant's application discusses a bend-up-less deflection yoke, whereas Kim is directed to a typical deflection yoke. Design considerations, and in particular location of the correction coil/corrector for the two types of deflection yokes differ, as discussed in more detail below. Accordingly, combining the two references is inappropriate and Applicant therefore requests that the Examiner withdraw this rejection to claims 1, 15, 21, and 27-28.

The present invention is generally directed to a bend-up-less deflection yoke for use with a color picture tube. The deflection yoke includes a horizontal deflection coil, a vertical deflection coil, an insulating frame disposed between the horizontal deflection coil and the vertical deflection coil, and a correction coil. As set forth in the pending claims, the correction coil is removably attached to a setting member, which allows for relatively easy and inexpensive manufacture and repair of the deflection yoke. Such advantages are not provided by the cited prior art.

Kim discloses a cathode ray tube having a deflection yoke, including a corrector 50. Corrector 50 includes four magnet cores, with wire wrapped around each core, installed around a circumference of separator 34a. Kim also discloses that "the corrector 50 is bonded with the deflection yoke 34" and that "corrector 50 may be fixed to the neck portion 31 of the cathode ray tube by bonding or a separate fixing member." (Column 2, lines 54-58). Nowhere does Kim teach or suggest removable attachment of the correction coil to a setting member.

The deflection yoke as taught by Kim is for use with a typical deflection yoke and is not suitable for use with bend-up-less type deflection yokes. Additional design differences between the claimed invention and the deflection yoke taught in Kim include: corrector 50 is much closer to the electron gun as opposed to the deflection yoke 34, as compared to the location of the correction coil of Applicant's invention, and the corrector of Kim is not positioned at the upper

part of the outer surface of the electron gun-side bend portion as it is in Applicant's deflection yoke. With the deflection yoke taught in Kim, it is not necessary or even desirable for the correction coil (corrector) to be detachable because the corrector does not interfere with assembly of the yoke when the vertical deflection coil is mounted. Accordingly, Kim does not teach or suggest the claimed invention. The patentability of claims 1, 15, 21, and 27-28 is addressed with more particularity below.

Claims 1 is not obvious in view of the purportedly admitted prior art in view of Kim because the combination of the references does not teach the claimed invention. The Examiner states that "[corrector] 50 of Kim is set at a fixed position in front of a wall surface of the setting member which faces the screen and therefore inherently has a positioning fixing member." Applicant disagrees. Kim does not disclose both a "setting member" and a "positioning fixing member." As noted above, unlike the case of a bend-up-less deflection yoke of the present invention, the deflection yoke of Kim does not benefit from the use of a detachable correction coil and therefore does not require or suggest a need for both a setting member and a positioning fixing member. The deflection yoke of Kim provides sufficient room for fixedly bonding the corrector to separator 34a, allowing for direct bonding of the corrector to a flat, smooth surface of the separator and consequently not requiring use of a positioning fixing member. In contrast, Applicant's invention employs a positioning fixing member to allow the correction coil to be freely detachable, which is nowhere taught or suggested by Kim. Accordingly claim 1 and claim 21 that depends therefrom are nonobvious in view of Kim and Applicant earnestly requests that the Examiner reconsider and withdraw this rejection to claims 1 and 21.

Claim 15 is similarly patentable over the purportedly admitted prior art in view of Kim because the references, alone or in combination, do not teach or suggest "a setting member...and

the correction coil is set at a fixed position by a positioning fixing member, which is provided with the correction coil and is structured to be *freely detachable* in relation to the setting member" (emphasis added). Applicant therefore request that the Examiner reconsider and withdraw this rejection to claim 15.

Claim 27 is also patentable over the purportedly admitted prior art in view of Kim because the references, alone or in combination, do not teach or suggest "a deflection yoke of a bend-up-less type" or "the correction coil being provided above the outer surface of an electron gun side bend portion of the deflection coils" as set forth in the preamble of the claim or "a step for setting, after setting the vertical deflection coil, the correction coil to the wall surface of the setting member which faces a screen, by the positioning fixing member" as set forth in claim 27. As noted above, with the deflection yoke of Kim, the corrector does not interfere with the mounting of the vertical deflection coil, even after the correction coil has been set. Consequently, there is no need to position the vertical deflection coil before positioning the correction coil to avoid the correction coil getting in the way when positioning the vertical deflection coil. The Examiner states that "since the correction coil is set to the wall surface of the setting member which faces the screen of the CRT, one of ordinary skill in the art at the time the invention was made would have set the vertical deflection coil before setting the correction coil so that the correction coil does not pose a problem of getting in the way when performing the step of setting the vertical deflection coil. Applicant disagrees. In a bend-up-less type deflection yoke, the correction coil must be mounted after the vertical correction coil is attached, so that the correction coil can be positioned above the outer surface of the electron gun. The same is true for the conventional back cover described in the background section of the present application. Such is not the case, however, for the deflection yoke described in Kim, which has

an entirely different structure. The deflection yoke of Kim requires only that a choice be made as to whether the corrector or the vertical deflection coil is mounted first (and Kim does not specify which one is mounted first). Therefore, Kim does not disclose or suggest "a step for setting, after setting the vertical deflection coil, the correction coil to the wall surface of the setting member which faces a screen, by the positioning fixing member." Accordingly, claim 27 and claim 28 that depends therefrom are allowable over the cited references and Applicant therefore requests allowance of claims 27 and 28.

Claim 3, 9, 17, and 23-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art purportedly admitted by Applicant in view of Kim and further in view of Japanese Laid Open Patent Application Serial No. 5-20250 in the name of Sato et al. ("Sato et al."). Applicant notes that claims 3 and 17 have been cancelled, rendering this rejection moot with respect to these claims and traverses this rejection with respect to claims 9 and 23-25 for the reasons set forth below.

Sato et al. generally discloses a deflection yoke including a detachable member that allows the correction coil to be mounted only from the electron gun side--the correction coil of Sato et al. cannot be mounted on a wall surface that faces the screen. The back cap of bobbin 5 of Sato et al. is mounted on the rear-end side, enlarged diameter portion of the deflection yoke, which corresponds to the electron gun side bend portion in a bend-up type deflection yoke. Thus, the correction coil is not positioned above the outer surface of the electron gun side bend portion as set forth in the claims. In addition, the yoke of Sato et al. includes a wall surface to which the back cap bobbin mounts the coil. The coil is mounted in advance on the wall surface, and the whole wall, including the coil, is mounted to the back side of the deflection yoke. This is similar to the "back cover" disclosed in the background section of the present application.

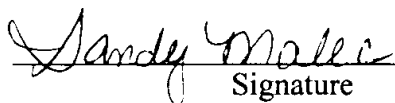
Consequently, the yoke disclosed in Sato et al. does not solve the problems associated with the art cited in the background section, namely, the back cover being a separate component, which results in increased manufacturing costs, compared to the claimed invention.

Applicant submits that it is impossible to mount the back cap bobbin taught by Sato et al. to "a setting member [that] is provided integrally formed ...[with] the insulating frame on the electron gun side" as set forth in claims 1 and 15. Accordingly, Sato et al. teaches away from the claimed invention as set forth in claims 1 and 15 and cannot be combined with the background section and/or Kim to form the claimed invention. Therefore claim 1 and claims 9 and 23-25 that depend therefrom and claim 15 are allowable over the cited references and Applicant therefore requests reconsideration and withdrawal of this rejection to claims 9 and 23-25.

In view of the foregoing remarks, Applicant submits that the claims are allowable over the cited references and earnestly requests allowance of all pending claims. The undersigned requests a phone call if for any reason one or more of the pending claims is considered to not be in condition for allowance.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on January 15, 2003.

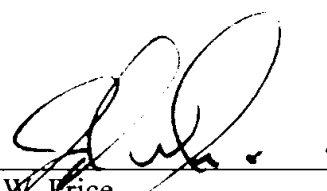
By: Sandy Malec


Signature

Dated: January 15, 2003

Very truly yours,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A deflection yoke of a bend-up-less type comprising a saddle-shaped horizontal deflection coil, a saddle-shaped vertical deflection coil, an insulating frame and a correction coil, the saddle-shaped horizontal deflection coil and the saddle-shaped vertical deflection coil being provided along, respectively, an inner and an outer surface of the insulating frame which insulates the deflection coils, and the correction coil being provided above the outer surface of an electron gun side bend portion of the deflection coils, wherein

a setting member is provided integrally formed in a fixed positional relation with respect to the insulating frame on the electron gun side and behind the bend portion of the deflection coils, and the correction coil is set at a fixed position by a positioning fixing member, which is provided with the correction coil and is structured to be freely detachable in relation to the setting member, in front of a wall surface of the setting member which faces [the] a screen and above the outer surface of the electron gun side bend portion.

15. (Amended) A color picture tube having (a) an outer envelope composed of a front panel formed with a phosphor screen surface on an inner surface, and a funnel, (b) an electron gun provided in a neck portion of the funnel, and (c) a deflection yoke mounted on an outer surface of the funnel, wherein

the deflection yoke of a bend-up-less type comprising a saddle-shaped horizontal deflection coil, a saddle-shaped vertical deflection coil, an insulating frame, and a correction coil, the saddle-shaped horizontal deflection coil and the saddle-shaped vertical deflection coil being provided along, respectively, an inner and an outer surface

of the insulating frame which insulates the deflection coils, and the correction [boil] coil being provided above the outer surface of an electron gun side bend portion of the deflection coils, wherein

a setting member is provided integrally formed in a fixed positional relation with respect to the insulating frame on the electron gun side and behind the bend portion of the deflection coils, and the correction coil is set at a fixed position by a positioning fixing member, which is provided with the correction coil and is structured to be freely detachable in relation to the setting member, in front of a wall surface of the setting member which faces the screen and above the outer surface of the electron gun side bend portion.

24 (Amended) The deflection yoke of Claim 23 wherein the positioning [setting] fixing member has a structure in which two opposing rod members extend from the correction coil substantially horizontally in opposite directions, a tip of each rod member is bent around the perimeter of the setting member, and an inner surface of the bend hooks to the perimeter of the setting member.

27. (Amended) A method of manufacturing for a deflection yoke of a bend-up-less type comprising a saddle-shaped horizontal deflection coil, a saddle-shaped vertical deflection coil, an insulating frame, and a correction coil, the saddle-shaped horizontal deflection coil and the saddle-shaped vertical deflection coil provided along, respectively, an inner and an outer surface of the insulating frame which insulates the deflection coils, and the correction coil being

provided above the outer surface of an electron gun side bend portion of the deflection coils, the method for assembling the deflection yoke comprising the steps of

a step for preparing the insulating frame which was integrally formed with [the] a setting member,

a step for providing the horizontal deflection coil on the inner surface of the insulating frame,

a step for providing the vertical deflection coil on the outer surface of the insulating frame, and

a step for setting, after setting the vertical deflection coil, the correction coil to the wall surface of the setting member which faces [the] a screen, by the positioning fixing member.